



C-CASS

The Cable operated Camera and Sampling System (C-CASS) is used to complement conventional geophysical surveying techniques, providing an easy to use ground sampling system that allows investigation of areas of concern during survey work or stand alone.

C-CASS is a special purpose dipping instrumentation platform, created to provide enhanced bottom and water column assessment during a geophysical survey at a lower cost than conventional ROV's while not unduly limiting mobility, operating from winches and gear already in use with other survey equipment. C-CASS is lowered to the bottom of the seafloor on an electro-mechanical cable, utilizing its data acquisition subsystems: a high frequency scanning sonar, video, and depth meter. C-CASS operates from vessels-of-opportunity using standard handling equipment and deep sea coaxial cables. Although comprehensive, the list of sensors and subsystems can be changed based on the needs of the operation.

SPECIFICATIONS

Frame:	Steel
Depth:	1000m
Weight:	approx 1500 lbs
Video:	Color Video, Digital Still
Sensors:	Heading, depth, temperature, conductivity, current
Controls:	pan, tilt, linear actuator, digital still
Size:	3ft H x 5 ft W x 6 ft L
Cable:	UNOLS coaxial

FEATURES

Digital Still and Analogue Video – Dual cameras provide the ability to look at the sea-floor areas real time and record those images, and use a high resolution digital camera to capture images that are needed at a higher resolution.

Grab Samplers – C-CASS uses two (2) Williamson modified Ponar grab samplers with the ability to sample at two separate locations remotely. This allows for bottom sampling of two sites without recovery of the C-CASS.

Data Integration – Geophysical and environmental data is collected continually. This data along with accurate location data can be than used at a later time during post processing of all data.

EQUIPMENT

The C-CASS system includes the following equipment:

- Williamson Modified Ponar Grab Samplers (2)
- Conductivity Temperature Depth sensor (Seabird)
- Current/Depth/Temperature/Compass/Pitch/Roll Sensor (Nortek)
- High Frequency Scanning Sonar
- C-CASS System Computers (data acquisition & Tritech computer)
- Pitch, Roll, Compass, and leak detection
- Streaming color Video (Deep Sea Power & Light)

Williamson Digital Still Camera System (based on Nikon CoolPix with Harbortronix interface)
Williamson oil compensated transformer
1000 meter depth rated Telemetry Bottle
Topside power/multiplexor

ELECTRO-MECHANICAL

Williamson Modified Ponar Grab Sampler – The grab sampler provides the ability to take 2 independent surface samples during C-Cass operation. A linear actuator provides a motive force to “unsprung” one sampler at a time. Once “unsprung” the weight of the Ponar sampler along with an outside motive force close the sampler and keep it closed.

Video System – The video system is a DeepSea Power and Light Micro-SeaCam underwater CCD camera mounted on a pan and tilt on the middle of the sled. This camera provides a color 760 x 580 pixel image to the surface monitor real time. Two, 100 watt lights provide illumination as necessary. Topside pan and tilt controls allow the operator to direct the camera. When surveying, video imagery is continuously recorded on a DVD recorder with time-date annotation. The C-CASS operators maintain a detailed video log that reflects any seabed lithological changes or other significant information. DVD title, along with Chapter title can be entered through the LiteOn display.

C-CASS System Computers - The C-CASS system surface computer maintains all communication to and from the system. The sub-surface computers in the telemetry bottle work in conjunction with the surface computers to control the C-CASS functions.

SENSORS

Conductivity/Depth/Temperature Sensor

This system is designed to measure properties of the water around the instrument

Inherent Sensors

Heading (compass), Pitch and Roll Sensor (1 device) Inherent in C-CASS are sensors for voltage and current, water intrusion.

Acoustic Profiler

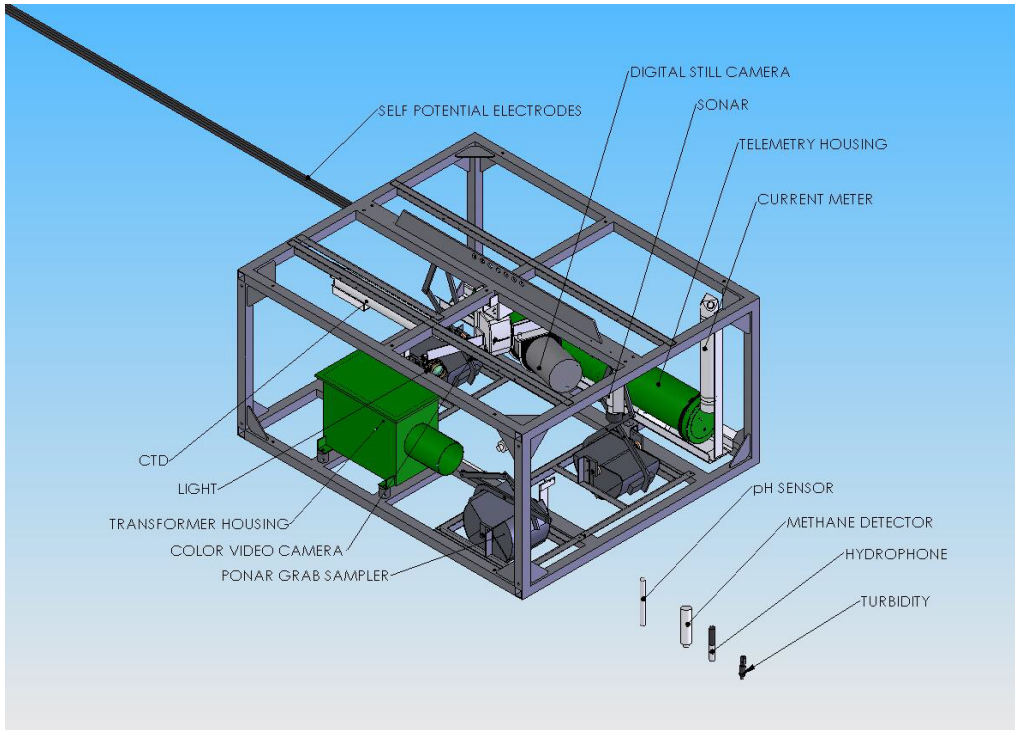
C-CASS acoustic profiler is a TriTech 300 kHz sector search sonar.

Current (water movement) sensor

Nortek 2000 meter Aquadopp acquires 3 dimensional current data along with backing up the following data - Depth/Temperature/Compass/Pitch/Roll Sensor

Other

Other sensors can be added as desired.



Note: PH, Methane, Hydrophone, and Turbidity sensors are optional, not standard.

